

Abstract

The present invention aims to provide a display screen where pixels are addressed by a scanning LASER. The screen performs as a photo-amplifier circuit, producing light output at the region being illuminated by the LASER. This illumination produces electron-hole pairs forming two small currents, one of which subsequently results in a much larger electron or hole current from a specific region of the photo-amplifier. This larger current reaches an emitting region where recombination with other electrons or holes produces light. The duration of the light output is increased up to a frame period or more by increasing the duration of the larger current using various materials having properties that prolong recombination of electrons and holes in a specific device region. In another instance, a feedback effect is utilized by using the incident output light, which may be filtered, replacing the scanning LASER that has left the pixel.